# CLAIMS

1. A method of measuring transcriptional activity in cells transplanted into a nonhuman animal model, comprising:

measuring an amount of a secretory protein in a nonhuman animal model that produces the secretory protein, the nonhuman animal model being obtained by transplanting cells that have been transfected therein an expression vector comprising a transcription regulatory sequence and a polynucleotide coding for the secretory protein operably linked to the transcription regulatory sequence, into a nonhuman animal; and

measuring transcriptional activity through the transcription regulatory sequence based on the amount of the secretory protein.

2. The method according to claim 1, wherein the transcription regulatory sequence comprises a transcription regulatory factor-binding sequence.

3. The method according to claim 2, wherein the transcription regulatory factor-binding sequence is at least one sequence selected from the group consisting of SEQ ID No: 1, SEQ ID No: 2, SEQ ID No: 3, SEQ ID No: 4, SEQ ID No: 5, SEQ ID No: 6, SEQ ID No: 7, and SEQ ID No: 8.

4. The method according to any one of claims 1 to 3, wherein the secretory protein is a secretory enzyme.

5. The method according to claim 4, wherein the secretory enzyme is a secretory alkaline phosphatase.

6. The method according to claim 5, wherein the secretory alkaline phosphatase is a heat-resistant secretory alkaline phosphatase.

7. The method according to claim 5, wherein the secretory alkaline phosphatase is a secretory placenta-derived alkaline phosphatase.

8. The method according to claim 7, wherein the secretory placenta-derived alkaline phosphatase is a protein consisting of an amino sequence of SEQ ID No: 11.

9. The method according to any one of claims 1 to 8, wherein an amount of the secretory protein in blood is measured.

10. The method according to claim 9, wherein the amount of the secretory protein in

blood is measured by measuring an enzymatic activity.

11. The method according to claim 10, wherein the enzymatic activity is alkaline phosphatase activity.

12. The method according to any one of claims 1 to 11, wherein the cells are tumor cells or immortalized cells.

13. A method of screening a compound that affects transcriptional activity, comprising the steps of:

(a) administering a compound to a nonhuman animal model that produces a secretory protein, the nonhuman animal model being obtained by transplanting cells that have been transfected therein an expression vector comprising a polynucleotide coding for the secretory protein, into a nonhuman animal; and

(b) measuring transcriptional activity in the transplanted cells in the nonhuman animal model administered with the compound, by the method according to any one of claims 1 to 12.

14. A method of screening a compound that affects transcriptional activity, comprising the steps of:

(a) transplanting cells that have been transfected therein an expression vector comprising a polynucleotide coding for a secretory protein, into a nonhuman animal administered with a compound; and

(b) measuring transcriptional activity in the transplanted cells in the nonhuman animal model, by the method according to any one of claims 1 to 12.

15. A method of measuring the number of transplanted cells in a nonhuman animal model, comprising:

measuring an amount of a secretory protein in a nonhuman animal model that produces the secretory protein, the nonhuman animal model being obtained by transplanting cells that have been transfected therein an expression vector comprising a transcription regulatory sequence and a polynucleotide coding for a secretory protein operably linked to the transcription regulatory sequence, into a nonhuman animal; and

measuring the number of the transplanted cells based on the amount of the secretory protein.

16. The method according to claims 15, wherein the secretory protein is a secretory enzyme.

17. The method according to claim 16, wherein the secretory enzyme is a secretory alkaline phosphatase.

18. The method according to claim 17, wherein the secretory alkaline phosphatase is a heat-resistant secretory alkaline phosphatase.

19. The method according to claim 17, wherein the secretory alkaline phosphatase is a secretory placenta-derived alkaline phosphatase.

20. The method according to claim 19, wherein the secretory placenta-derived alkaline phosphatase is a protein consisting of an amino sequence represented by SEQ ID No: 11.

21. The method according to any one of claims 15 to 20, wherein an amount of the secretory protein in blood is measured.

22. The method according to claim 21, wherein the amount of the secretory protein in blood is measured by measuring an enzymatic activity.

23. The method according to claim 22, wherein the enzymatic activity is alkaline phosphatase activity.

24. The method according to any one of claims 15 to 23, wherein the cells are tumor cells or immortalized cells.

25. The method according to any one of claims 15 to 24, wherein the transcription regulatory sequence comprises a constitutive transcription regulatory sequence.

26. The method according to claim 25, wherein the constitutive transcription regulatory sequence is at least one sequence selected from the group consisting of SV40 promoter, CMV promoter, thymidine kinase promoter, ubiquitin C promoter, elongation factor 1 alpha (EF1a) promoter, β-actin promoter, glyceraldehyde-3-phosphate dehydrogenase promoter, phosphoglycerokinase promoter, β2-microglobulin promoter, and β-glucuronidase promoter.

27. The method according to claim 25, wherein the constitutive transcription regulatory sequence is SV40 promoter.

28. The method according to claim 25, wherein the constitutive transcription

regulatory sequence is a sequence represented by SEQ ID No: 9.

29. A method of screening a compound that affects transcriptional activity, comprising the steps of:

(a) administering a compound to a nonhuman animal model that produces a secretory protein, the nonhuman animal model being obtained by transplanting cells that have been transfected therein an expression vector comprising a polynucleotide coding for the secretory protein, into a nonhuman animal; and

(b) measuring the number of the transplanted cells in the nonhuman animal model administered with the compound, by the method according to any one of claims 15 to 28.

30. A method of screening a compound that affects the number of transplanted cells, comprising the steps of:

(a) transplanting cells that have been transfected therein an expression vector comprising a polynucleotide coding for a secretory protein, into a nonhuman animal administered with a compound; and

(b) measuring the number of the transplanted cells in the nonhuman animal by the method according to any one of claims 15 to 28.

31. A method of measuring tumor volume in a nonhuman animal model, comprising:

measuring an amount of a secretory protein in a nonhuman animal model that develops a tumor and produces the secretory protein in the tumor, the nonhuman animal model being obtained by transplanting cells that have been transfected therein an expression vector comprising a transcription regulatory sequence and a polynucleotide coding for a secretory protein operably linked to the transcription regulatory sequence, into a nonhuman animal; and

measuring tumor volume based on the amount of the secretory protein.

32. The method according to claim 31, wherein the secretory protein is a secretory enzyme.

33. The method according to claim 32, wherein the secretory enzyme is a secretory alkaline phosphatase.

34. The method according to claim 33, wherein the secretory alkaline phosphatase is a heat-resistant secretory alkaline phosphatase.

35. The method according to claim 33, wherein the secretory alkaline phosphatase is a secretory placenta-derived alkaline phosphatase.

36. The method according to claim 35, wherein the secretory placenta-derived alkaline phosphatase is a protein consisting of an amino sequence represented by SEQ ID No: 11.

37. The method according to any one of claims 31 to 36, wherein an amount of the secretory protein in blood is measured.

38. The method according to claim 37, wherein the amount of the secretory protein in blood is measured by measuring an enzymatic activity.

39. The method according to claim 38, wherein the enzymatic activity is alkaline phosphatase activity.

40. The method according to any one of claims 31 to 39, wherein the cell is a tumor cell or an immortalized cell.

41. The method according to any one of claims 31 to 40, wherein the transcription regulatory sequence comprises a constitutive transcription regulatory sequence.

42. The method according to claim 41, wherein the constitutive transcription regulatory sequence is at least one sequence selected from the group consisting of SV40 promoter, CMV promoter, thymidine kinase promoter, ubiquitin C promoter, elongation factor 1 alpha (EF1a) promoter, β-actin promoter, glyceraldehyde-3-phosphate dehydrogenase promoter, phosphoglycerokinase promoter, β2-microglobulin promoter, and β-glucuronidase promoter.

43. The method according to claim 41, wherein the constitutive transcription regulatory sequence is an SV40 promoter.

44. The method according to claim 41, wherein the constitutive transcription regulatory sequence is a sequence represented by SEQ ID No: 9.

45. A method of screening a compound that affects tumor volume, comprising the steps of:

(a) administering a compound to a nonhuman animal model that develops a tumor and produces a secretory protein in the tumor, the nonhuman animal model being obtained by transplanting cells that have been transfected therein an expression vector comprising a

polynucleotide coding for the secretory protein, into a nonhuman animal; and

(b) measuring tumor volume in the nonhuman animal model administered with the compound, by the method according to any one of claims 31 to 44.

46. An expression vector comprising a polynucleotide coding for a secretory protein, for use in the method according to any one of claims 1 to 45.

47. A cell that has been transfected therein an expression vector comprising a polynucleotide coding for a secretory protein, for use in the method according to any one of claims 1 to 45.

48. A nonhuman animal that produces a secretory protein, obtained by transplanting cells that have been transfected therein an expression vector that comprises a polynucleotide coding for a secretory protein, into a nonhuman animal, for use in the method according to any one of claims 1 to 45.

49. A measuring kit, comprising an expression vector that comprises a polynucleotide coding for a secretory protein, for use in the method according to any one of claims 1 to 45.

50. A measuring kit, comprising cells that have been transfected therein an expression vector that comprises a polynucleotide coding for a secretory protein, for use in the method according to any one of claims 1 to 45.

51. A measuring kit, comprising a nonhuman animal that produces a secretory protein, obtained by transplanting cells that have been transfected therein an expression vector that contains a polynucleotide coding for the secretory protein, into a nonhuman animal, for use in the method according to any one of claims 1 to 45.